

REMARKS

In the Office Action dated May 28, 2008, the Examiner rejected claims all claims on various grounds over the following references or combinations thereof: **Meadows** (USPN 4,916,308 hereinafter "**Meadows**"), **Graham** (USPN 5,914,709 hereinafter "**Graham**"), **Francis** (USPN **6,181,842** hereinafter "**Francis**"), and **Hoshino** (US Publication 2002/0030668 hereinafter "**Hoshino**"). In response thereto, the Applicant has **amended** **Claims 1, 11, 12, 15-17, 24-26, 28, & 42. Claim 18, 19, 39-41, and 43 are newly cancelled. Claims 44-46 are added. Claims 1, 2, 4-17, 20-41, 42, and 44-46 are at issue.**

Information Disclosure:

The Applicant's have submitted herewith, a legible copy of *Paloczi et al* as requested by the Examiner.

Drawings:

The claims affected by this drawing request (Claims 39, 41, & 43) have been cancelled for other reasons. However, since such claims are no longer at issue, applicants request that this objection to the drawings be withdrawn.

Claim Objections:

Claim 25 is corrected to implement the Examiner's suggested change such that Claim 1 line 5 now reads as "**display** screen" instead of "--screen--". This is believed to clear any remaining ambiguity. Accordingly, the Applicant's request that this objection be withdrawn.

Brief Discussion of Amended Claim 11 and New Claim 46:

Claim 11 is amended to recite an alternative refresh and alternative subtraction cycling. This can provide some power savings as well as a more continuous level of tracking and subtraction update. This can also reduce the computational overhead by cutting the workload substantially. Thus, such an implementation provides a number of benefits. This same concept is applicable to new **Claim 46** as well. The applicant's respectfully asserts that this defines over the art of record.

Rejections Under 35 U.S.C. § 112:

►► Concerning items 7 & 8, **Claims 1, 2, 4-23, 38, and 40** are rejected under 35 U.S.C. § 112, 2nd paragraph as being indefinite. In response applicants have implemented the Examiner's suggested change such that Claim 1 line 5 now reads as "**display** screen" instead of --screen--. This is believed to clear any remaining ambiguity. Accordingly, Applicant's request that this rejection be withdrawn.

►► Concerning **Item 10, Claims 1, 2, 4-22, and 28-43** are rejected under 35 U.S.C. § 112, 1st paragraph as failing to comply with the written description requirement. In particular, the Action suggests that the claim limitation of a "data input device comprising a display device" of Claim 1 is unsupported.

Applicants respectfully disagree. All such a limitations and combinations are respectfully asserted to have been disclosed in the application from the original date of filing. With all due respect to the Examiner, paragraphs [0006] and [0007] speak of a device that is a "data entry apparatus", as in fact, would be any device configured in accordance with the teachings of the disclosure. The data entry device is also described here is an optical position digitizer that uses a lamina (i.e., a two-dimensional sheet) of light to track the position of a stylus or other like device. Additionally, [0015] states that the **display screen 14** can be any type of data display according to various embodiments of the invention. For example, the screen 14 can be a display for a personal computer, workstation, server, mobile computer, laptop computer, a point of sale terminal, personal digital assistance (PDA), cell phone, any combination thereof, or any type of device that **receives and processes data entries**. Thus, the display device, adjacent lamina of light, and input device are all well described and associated. Additionally, it should be pointed out that the cited *Meadows* reference describes well the use of a data input device and a position sensitive input device. Thus, the state of the art well conveys to one of reasonable skill that the inventors had possession of the invention at the time the application was filed. Moreover, the description is well beyond that which one of ordinary skill would need to fully appreciate and construct the claimed device. This same discussion should similarly apply to dependent **Claims 2, 4-23, and 40**.

This discussion is no longer applicable to **cancelled Claim 39**.

As to **Claim 40** light coupled to spaced facets are disclosed at [0017] of the disclosure.

As to **Claim 28** this ground of rejection is directly addressed by the discussion of **Claim 1** above. This same discussion should similarly apply to dependent **Claims 29-38 and 42**.

As to **Claim 42**, for other reasons, this claim has been amended to reference “spaced apart facets” rather than --point sources-- and as such it is respectfully submitted that this rejection is no longer applicable.

As to **Claim 43**, this claim has been cancelled for other reasons and as such it is respectfully submitted that this rejection is no longer applicable.

Claims 7 and 8 are more emphatically written as Markush groups and should accordingly be allowable as currently amended.

Claim 19 is cancelled, obviating further discussion of this claim.

As such, it is respectfully requested that all grounds of rejection under 35 U.S.C. § 112 be withdrawn.

Rejections Under 35 U.S.C. § 102:

Meadows

Claims 1, 2, 6-10, 21, 22, 24-32, 35, 37-39, and 41-43 stand rejected as anticipated by *Meadows* under 35 U.S.C. § 102(b).

As to **Claims 39, 41, and 43**, these claims are **cancelled** without prejudice, obviating further discussion of these claims.

As to **Claim 1**, this claim is **amended** to recite “a light source configured to generate a substantially continuous lamina of light that is projected from a plurality of spaced apart optical facets” and “an optical position detection device comprising a light receiving array having a plurality of lenses integrally formed with an associated plurality of optical channels, the array optically coupled to the substantially continuous lamina of light such that the plurality of lenses capture light from the lamina and focus the light into the associated plurality of optical channels”. These elements are not set forth or suggested by *Meadows*. Hence, it is respectfully suggested that this amendment overcomes the *Meadows* reference.

Substantially similar amendments can be found in base **Claims 24 and 28**.

Support for these amendments can be found throughout the specification, for example, at paragraphs [0023], [0024], Fig. 2 and elsewhere.

For at least these reasons, it is respectfully submitted that all of the pending dependent Claims (**Claims 2, 6-10, 21, 22, 25-27, 29-32, 35, 37-38, and 42**) are allowable over the art of record for at least the reasons set forth above.

The applicant's further take the time to point out that the cited portion of *Meadows* (4:15-17) does not teach a substantially homogeneous wavelength. It teaches one or a plurality of LED's which does not necessarily comprise or teach a homogeneous wavelength. Accordingly, the applicants request that this ground of rejection be withdrawn as to all of the above referenced Claims.

Graham

Claims 1, 2, 6-9, 21, 22, 24-32, 35-39, and 41-43 stand rejected as anticipated by *Graham* under 35 U.S.C. § 102(b).

As to **Claims 39, 41, and 43**, these claims are **cancelled** without prejudice, obviating further discussion of these claims.

As to **Claim 1**, this claim recites "a substantially continuous lamina of light ... wherein the lamina extends over a substantial portion of the area of the display screen". Firstly, as has been exhaustively explained in past responses, the taught optical field of *Graham* is a grid of discrete light beams (e.g., 418) that in aggregate span a substantial portion of the area of the display screen. A light "beam" is not a lamina. A vast array of citations to the grid of light of *Graham* have previously been provided. Such will be copied and pasted for the convenience of the Examiner.

The *Graham* reference teaches an optical input device that relies exclusively on a grid of light. See for example the following specific teachings in the *Graham* reference:

- i. the Abstract which describes a ***grid of light*** created from a waveguides;
- ii. Figure 1 shows a plurality of light beams 106 generated by collimating lenses 116. See column 4, lines 13-16 and 39-41;
- iii. Figure 3 shows an input device 300 that generates ***parallel light beams***. See Column 5, lines 25-28;

- iv. Figure 4 shows another input device 400 with waveguides 410 and 412 that generate *horizontal 418 and vertical 420 beams of light*. See column 6, lines 28-64;
- v. Figure 5 shows two waveguides 502 and 504 configured to generate and receive parallel beams of light 508. See column 7, lines 57-67 and column 8 lines 1-9;
- vi. Figures 6A and 6B show cross sections of the waveguides 502/504 of Figure 5. See column 8, lines 11-15;
- vii. Figure 6E shows a flared output waveguide to reduce “diffractive spreading” of the light. See column 9, lines 38-47;
- viii. Figures 10B and 10C show beams of collimated light. See column 13, lines 14-23; and
- ix. Figures 11A and 11B show collimated beams of light 1106. See column 13, lines 28-34.

The applicant’s further point out that the inventors here are in the perfect position to know what the *Graham* reference teaches, as they invented it and are definitely persons of ordinary skill as well eminently well versed on their own technology.

Moreover, it is pointed out that a “beam of light” of *Graham* defines a narrow almost pointlike stream of photons that cannot “[extend] over a substantial portion of the area of the display screen”. Moreover, if such a beam is defined as a “lamina” it would be inoperative in accordance with the principles of the invention because the narrow single beam cannot provide the position information required by the present invention. Accordingly, the applicants respectfully submit that the cited *Graham* reference fails to establish a *prima facie* case of anticipation as to Claim 1.

Thus, this element (as well as others) is not set forth or suggested by *Graham*. Hence, it is respectfully suggested that this reference is inapplicable to Claim 1.

Substantially similar language can be found in base **Claims 24 and 28** as pending or now amended.

For at least these reasons, it is respectfully submitted that all of the pending dependent Claims (**Claims 2, 6-9, 21, 22, 25-27, 29-32, 35-38, and 42**) are allowable over the art of record for at least the reasons set forth above. Accordingly, the applicants request that this ground of rejection be withdrawn.

Francis

Claims 1, 2, 6-9, 21, 22, 24-32, 35-39, and 41-43 stand rejected as anticipated by *Francis* under 35 U.S.C. § 102(b).

As to **Claims 39, 41, and 43**, these claims are **cancelled** without prejudice, obviating further discussion of these claims.

As to **Claim 1**, this claim recites “a substantially continuous lamina of light ... wherein the lamina extends over a substantial portion of the area of the display screen”. Firstly, as has been exhaustively explained in past responses, the taught optical field of *Francis* is a grid of discrete light beams (e.g., 15X/15Y) that in aggregate span a substantial portion of the area of the display screen. A vast array of citations to the grid of light of *Francis* have previously been provided. A few of such references are provided for the convenience of the Examiner.

See for example the following specific teachings in *Francis*:

- i. with reference to Figure 1A, *Francis* teaches “***X send light beams 15X***” and “***Y send light beams 15Y***”. See column 5, lines 14-20 and column 9, lines 55-67;
- ii. with reference to Figure 1B, *Francis* teaches the transmission of collimated light beams by X and Y send optics systems 18X and 18Y respectively. See column 5, lines 44-55;
- iii. with reference to Figures 2A and 3, the optics 28 and 38 are provided to enhance the collimation of light beams. See column 6, lines 27-36; and
- iv. with reference to Figures 4 and 5, *Francis* again teaches the transmission of collimated light beams. See column 8, lines 22-31;

The applicant’s further point out that the inventors here are in the perfect position to know what the *Francis* reference teaches, as they also invented this technology and are definitely persons of ordinary skill as well eminently well versed on their own technology.

Moreover, as is explained above a “beam of light” of *Francis* defines a narrow almost pointlike stream or line of photons that cannot “[extend] over a substantial portion of the area of the display screen”. All it can do is generate a thin line (not a sheet or lamina) over the smallest fraction of the display surface. Such a miniscule line is not the recited “substantial portion of the area of the display screen”. So it does not teach the recited limitation. Moreover, if such a beam is defined as a “lamina” it would be inoperative in accordance with the principles of the invention because the narrow single beam cannot provide the position information required by

the present invention. Accordingly, the applicants respectfully submit that the cited *Francis* reference fails to establish a *prima facie* case of anticipation as to Claim 1.

Thus, this element (as well as others) is not set forth or suggested by *Graham*. Hence, it is respectfully suggested that this reference is inapplicable to Claim 1.

Substantially similar language can be found in base **Claims 24 and 28** as pending or now amended.

For at least these reasons, it is respectfully submitted that all of the pending dependent Claims (**Claims 2, 6-9, 21, 22, 25-27, 29-32, 35-38, and 42**) are allowable over the art of record for at least the reasons set forth above. Accordingly, the applicants request that this ground of rejection be withdrawn.

Accordingly, the applicants request that this ground of rejection be withdrawn as to all claims rejected under 35 U.S.C. § 102.

Rejections Under 35 U.S.C. § 103:

► ► **Claims 4, 5, 33, & 34** stand rejected as obvious in view of *Meadows* under 35 U.S.C. § 103.

Meadows

The *Meadows* reference fails for all the reasons expressed above with respect to base Claims 1 and 28. Thus, it is an insufficient reference here as well. It is worth pointing out that as to **Claims 4 and 33** “uniform intensity” is a highly advantageous design feature. It is not a “mere design choice”. As indicated in [0014] of the specification, such uniformity enables sensors with a reduced dynamic range to be employed thus substantially reducing cost. Also, high interpolation accuracy and therefore more accurate position determination are also achieved. Also, lower processing overhead is required due to the more uniform input data. Thus, there are many problems solved and advantages reaped by the use of such uniform intensity lamina. Since none of the cited art teaches or suggests uniform light intensity or any of the advantages accruing therefrom, it cannot be said to teach the recited limitation. Thus, for at least these reasons, it is respectfully submitted that the cited art fails to establish a *prima facie* case of obviousness. Accordingly, the applicants respectfully request that the proffered grounds of rejection be withdrawn.

Graham

The *Graham* reference fails for all the reasons expressed above with respect to base Claims 1 and 28. Thus, it is an insufficient reference here as well. It is worth pointing out that as to **Claims 4 and 33** “uniform intensity” is a highly advantageous design feature. It is not a “mere design choice”. As indicated in [0014] of the specification, such uniformity enables sensors with a reduced dynamic range to be employed thus substantially reducing cost. Also, high interpolation accuracy and therefore more accurate position determination are also achieved. Also, lower processing overhead is required due to the more uniform input data. Thus, there are many problems solved and advantages reaped by the use of such uniform intensity lamina. Since none of the cited art teaches or suggests uniform light intensity or any of the advantages accruing therefrom, it cannot be said to teach the recited limitation. Thus, for at least these reasons, it is respectfully submitted that the cited art fails to establish a *prima facie* case of obviousness. Accordingly, the applicants respectfully request that the proffered grounds of rejection be withdrawn.

Francis

As explained above, the *Francis* reference fails for all the reasons expressed above with respect to base Claims 1 and 28. Thus, it is an insufficient reference here as well. It is worth pointing out that the “uniform intensity” limitation of **Claims 4 and 33** is a highly advantageous design feature and not a “mere design choice”. As indicated in the specification, such uniformity solves many design problems and enables numerous advantages. Since none of the cited art teaches or suggests uniform light intensity or any of the advantages accruing therefrom, it cannot be said to teach the recited limitation. Thus, for at least these reasons, it is respectfully submitted that the cited art fails to establish a *prima facie* case of obviousness. Accordingly, the applicants respectfully request that the proffered grounds of rejection be withdrawn.

►► **Claims 11, 16-19, & 36** stand rejected as obvious in view of *Meadows* and *Graham* under 35 U.S.C. § 103.

The combination of the *Meadows* and *Graham* references fail for all the reasons expressed above with respect to base Claims 1 and 28. Thus, they provide an insufficient basis for rejection here as well. Thus, for at least these reasons, it is respectfully submitted that the cited art fails to establish a *prima facie* case of obviousness. Accordingly, the applicants respectfully request that this ground of rejection be withdrawn.

►► **Claim 20** stands rejected as obvious in view of *Meadows* and *Francis* under 35 U.S.C. § 103.

Meadows and Francis

The combination of the *Meadows* and *Francis* references fail for all the reasons expressed above with respect to base Claim 1. Thus, they provide an insufficient basis for rejection here as well. Thus, for at least these reasons, it is respectfully submitted that the cited art fails to establish a *prima facie* case of obviousness. Accordingly, the applicants respectfully request that this ground of rejection be withdrawn.

Graham and Francis

The combination of the *Graham* and *Francis* references fail for all the reasons expressed above with respect to base Claim 1. Thus, they provide an insufficient basis for rejection here as well. Thus, for at least these reasons, it is respectfully submitted that the cited art fails to establish a *prima facie* case of obviousness. Accordingly, the applicants respectfully request that this ground of rejection be withdrawn.

►► **Claim 23** stands rejected as obvious under 35 U.S.C. § 103.

Meadows and Hoshino

The combination of the *Meadows* and *Hoshino* references fail for all the reasons expressed above with respect to base Claim 1 above. *Hoshino* adds nothing to overcome the basic shortcomings of *Meadows*. Thus, they provide an insufficient basis for rejection here as well. Thus, for at least these reasons, it is respectfully submitted that the cited art fails to establish a *prima facie* case of obviousness. Accordingly, the applicants respectfully request that this ground of rejection be withdrawn.

Graham and Hoshino

The combination of the *Graham* and *Hoshino* references fail for all the reasons expressed above with respect to base Claim 1 above. *Hoshino* adds nothing to overcome the basic shortcomings of *Graham*. Thus, they provide an insufficient basis for rejection here as well. Thus, for at least these reasons, it is respectfully submitted that the cited art fails to establish a

prima facie case of obviousness. Accordingly, the applicants respectfully request that this ground of rejection be withdrawn.

Francis and Hoshino

The combination of the *Francis* and *Hoshino* references fail for all the reasons expressed above with respect to base Claim 1 above. *Hoshino* adds nothing to overcome the basic shortcomings of *Francis*. Thus, they provide an insufficient basis for rejection here as well. Thus, for at least these reasons, it is respectfully submitted that the cited art fails to establish a *prima facie* case of obviousness. Accordingly, the applicants respectfully request that this ground of rejection be withdrawn.

Accordingly, as to all claims that are rejected under 35 U.S.C. § 103, the Applicants respectfully request that this ground of rejection be withdrawn.

The Double Patenting Rejection

In the event the Examiner indicates that the subject application contains allowable claims, a terminal disclaimer will be filed.

Added Claims

Claims 44-46 are added. **Claim 46** has been discussed already hereinabove. **Claim 44** refers to an *integral lens* structure that *protrudes* from an inner wall of the substrate to provide improved focus on its integrally formed fibers. Such a construction also provides an enhanced range of optical lens structures that can be employed to optimize optical properties of the system. **Claim 45** refers to a narrow bandwidth lamina which may suffer from certain power issues but can provide the extremely valuable benefits of improved SNR and enhanced resolution.

Support for **Claim 44** can be found at many locations in the specification, for example at [0018]. Also, support for **Claim 45** can be found at many locations in the specification, for example [0020]. Support for **Claim 46** can be found at many locations in the specification, for example Figs. 2-3C, [0023], etc.

Conclusion:

In view of the foregoing amendments and remarks, it is respectfully submitted that the claimed invention as presently presented is patentable over the art of record and that this case is now in condition for allowance.

Accordingly, the applicants request withdrawal of all pending rejections and request reconsideration of the pending application and prompt passage to issuance. As an aside, the applicants clarify that any lack of response to any of the issues raised by the Examiner is not an admission by the applicant as to the accuracy of the Examiner's assertions with respect to such issues. Accordingly, applicant's specifically reserve the right to respond to such issues at a later time during the prosecution of the present application, should such a need arise.

As always, the Examiner is cordially invited to telephone the applicants representative to discuss any matters pertaining to this case. Should the Examiner wish to contact the undersigned for any reason, the telephone numbers set out below can be used.

Additionally, if any fees are due in connection with the filing of this Amendment, the Commissioner is authorized to deduct such fees from the undersigned's Deposit Account No. 50-4481 (Order No. GRAMP005).

Respectfully submitted,
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